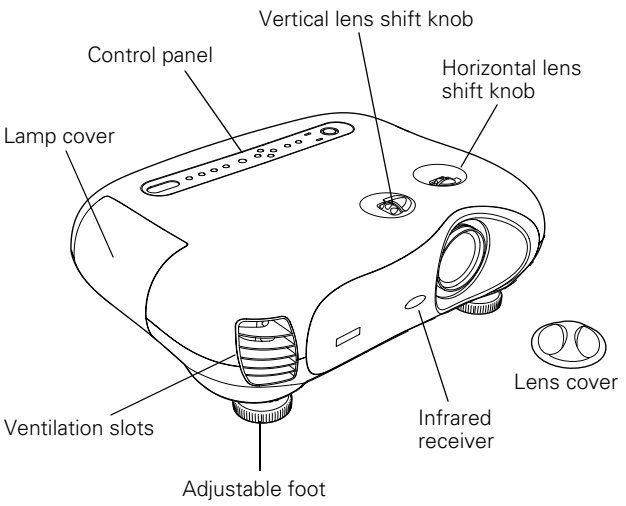
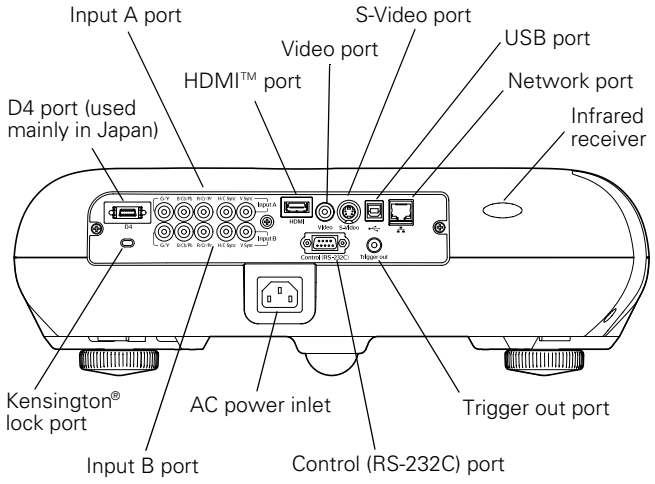
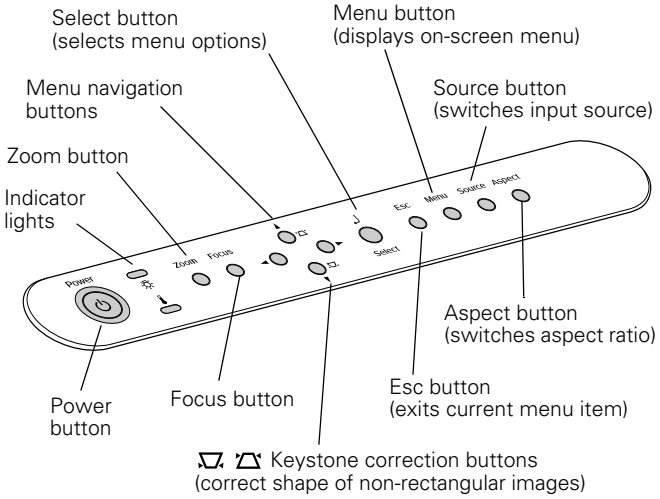
Projector Parts







Projector Specifications

General

Type of display	Poly-silicon Thin Film Transistor (TFT) active matrix with Micro Lens Array
Size of LCD panels	Diagonal: 0.7 inches (18 mm)
Lens	F=2.1 to 4.3 mm, f=21.4 to 31.7 mm
Zoom ratio	1:1.5
Resolution	1280 × 720 pixels (720p)
Brightness	1000 ANSI lumens max. (Dynamic or Living Room color mode)
Contrast ratio	1200:1
Image size	30 to 300 inches (0.76 to 7.6 m)
Projection distance	2.9 to 44 feet (0.9 to 13.4 m)
Optical aspect ratio	16:9
Keystone correction angle	± 15 ° vertical
Noise level	36 dB (Dynamic or Living Room color mode); 27 dB (all other color modes)

Lamp

Type	UHE (Ultra High Efficiency)
Power consumption	200 W
Lamp life (approximate)	1700 hours (Dynamic or Living Room color mode) 3000 hours (all other color modes)
Part number	V13H010L28

Remote Control

Range	30 feet (10 meters)
Battery	AA × 2

Dimensions

Height	4.7 inches (119 mm)
Width	17.7 inches (450 mm)
Depth	13.6 inches (345 mm)
Weight	13.8 lb (6.2 kg)

Electrical

Rated frequency	50/60 Hz
Power supply	100 to 120 V: 3.3 A 200 to 240 V: 1.5 A
Power consumption	Operating: 290 W max. Standby: 0.7 W

Environmental

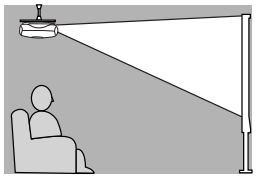
Temperature (non-condensing)	Operating: 41 to 95 °F (5 to 35 °C) Storage: 14 to 140 °F (–10 to 60 °C)
Humidity	Operating: 20 to 80% RH, non-condensing Storage: 10 to 90% RH, non-condensing

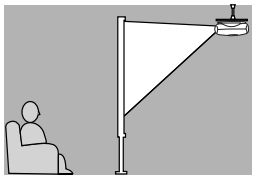
Safety

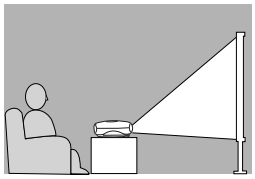
United States	FCC Part 15B Class B UL1950 Rev. 3
Canada	ICES-003 Class B CSA C22.2 No. 950-95 (cUL)
CE Marking	Directive 89/336/EEC EN 55022, 1998 Class B EN 55024, 1998

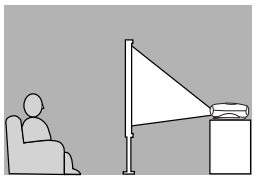
Positioning the Projector

You can install the projector for these viewing setups:


Front/Ceiling


Rear/Ceiling


Front


Rear

When projecting from a rear or overhead position, reorient the image by selecting the correct Projection option (see page 5).

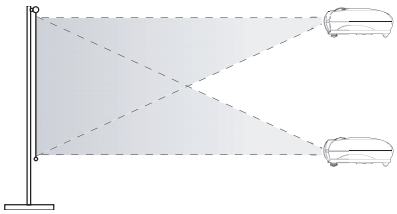
Image Size and Projection Distance

The maximum size of the image is determined by the distance from the projector's lens to the screen. Depending on how you use the Zoom and other settings, the actual size may be smaller.

Projection distance	Maximum diagonal image size (16:9)
2.9 feet	30 inches (26 × 14 inches)
3.9 feet	40 inches (34 × 19 inches)
5.9 feet	60 inches (52 × 29 inches)
7.9 feet	80 inches (69 × 39 inches)
9.9 feet	100 inches (87 × 49 inches)
19.9 feet	200 inches (174 × 98 inches)
29.9 feet	300 inches (261 × 147 inches)

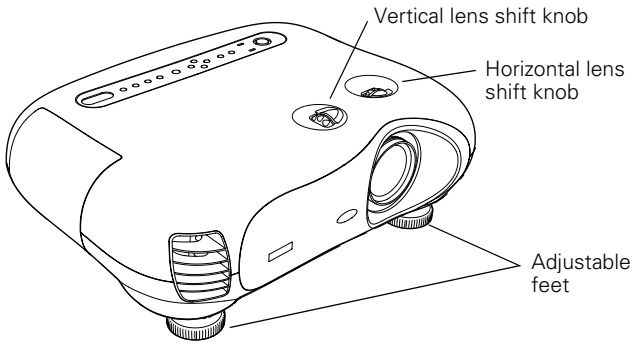
Projecting a Square Image

For best image quality, place the projector at a height where its lens is between the top and bottom of the screen. This lets you keep the projector level and use the vertical lens shift knob to position the image.



If you place the projector above or below screen level, you'll have to tilt it up or down to aim the image at the screen; this distorts (or "keystones") the shape of the image, but you can correct it using the projector's Keystone function (see page 5).

If you place the projector off to the side, aim it straight ahead (rather than at the center of the screen), then use the horizontal lens shift knob to center the image. Do not place the projector farther to the left or right than the edge of the screen, or you will not be able to project a square (or rectangular) image.



Tip: *You can display a test pattern to help you center the image on the screen. Press the* Pattern *button on the remote control, then select* Cross-hatching. *You can use the feet to correct the angle of the image if it's tilted.*

Cable Connections

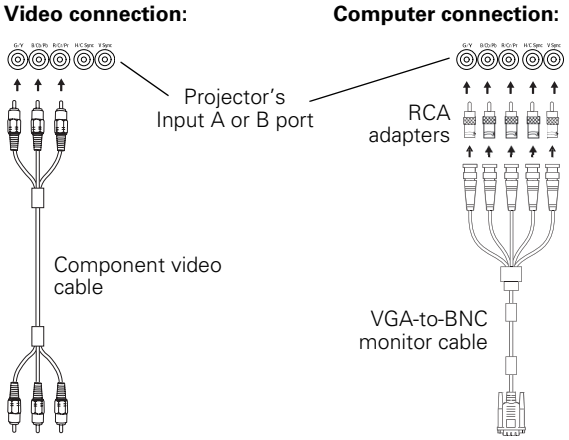
You can connect up to five pieces of video equipment to the projector, using the ports listed below (cables are not included):

Port	Required Cable	Supported video formats
Video	RCA video cable	Analog TV (NTSC, PAL, SECAM)
S-Video	S-video cable	Analog TV (NTSC, PAL, SECAM)
Input A*	For video, use a 3-connector component video cable. For a computer, use a 5-connector VGA-to-BNC monitor cable and attach RCA adapters to each of the five BNC connectors.	Digital TV (SDTV and HDTV) Analog TV (NTSC, PAL, SECAM) Various computer monitor formats (see table on page 4)
Input B*	Same as Input A	Same as Input A
HDMI	HDMI cable	Digital TV (SDTV and HDTV) Various computer monitor formats (see table on page 4)

* For video, select YCbCr, YPbPr, or RGB-Video as the Input Signal setting in the projector's menu system (see page 5). For a computer connection, select RGB.

For best results, connect your video equipment to the HDMI (High-Definition Multimedia Interface) port. If your equipment doesn't support HDMI, connect it to one of the following ports (highest quality listed first): Input A or B (for component video), S-Video, or Video (composite video).

When connecting video equipment to the Input A or Input B port, connect the component video cable to the three terminals on the left. Be sure to match the corresponding colors between the cable and the terminals.



When connecting a computer, use a VGA-to-BNC monitor cable, and attach RCA adapters to each of the five BNC connectors. Use the markings on the connectors to match them to the correct terminals on the projector.

Making Other Connections

Depending on how you plan to use the projector, you may need to connect these additional cables:

❏ Control (RS-232C), USB, or network port

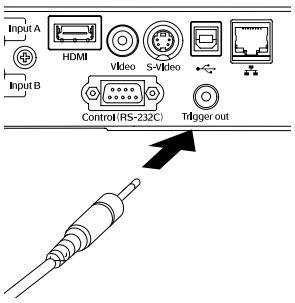
Connect a computer to one of these ports to use the Cinema Color Editor software (see page 10). A USB cable is included.

Caution: *Be sure to install the Cinema Color Editor software before connecting the USB cable (see the* User's Guide*).*

❏ Trigger out port

This port outputs a 12-volt DC signal when the projector is turned on, and can be used to raise or lower a projection screen automatically.

Connect a 3.5-mm mini jack to the port, as shown.



Compatible Video Formats

The projector supports NTSC, PAL, and SECAM, as well as the digital video and computer monitor formats listed below.

Digital video formats

Format	Signal name	Resolution	Aspect ratio
SDTV	480i 480p* 575i 575p	640 × 480 640 × 480 768 × 576 768 × 576	4:3 4:3 4:3 4:3
HDTV	720p 1080i	1280 × 720 1920 × 1080	16:9 16:9

* Not available for RGB Video.

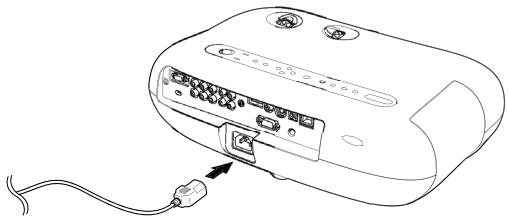
If you're projecting from a computer in analog RGB format, set the computer's video card at a refresh rate (vertical frequency) that's compatible with one of the following monitor formats. The frequencies of some computers may not allow images to display correctly.

Computer monitor formats (4:3)

Format	Resolution	Refresh rate (Hz)
VGA	640 × 480	60
VESA	640 × 480	72, 75, 85
SVGA	800 × 600	60, 72, 75, 85
XGA	1024 × 768	43, 60, 70, 75
MAC13" MAC16" MAC19"	640 × 480 832 × 624 1024 × 768	67 75 75

Turning the Projector On and Off

1. Connect the power cord to the projector and a grounded electrical outlet.



2. Press the On button on the remote control, or press the ⏻ Power button on the projector.

   The projector takes about 30 seconds to warm up. If you don't see an image, you may need to select the image source (see page 5).

Turning Off the Projector

To turn off the projector, press the Off button on the remote control (or press the ⏻ Power button on the projector twice). Let the projector cool while the ⏻ power light flashes (about 30 seconds). Once the light stops flashing and stays on, it's safe to unplug the projector.

Caution: *Turn the projector off when not in use. Continuous 24-hour-a-day use may reduce its overall life. Never unplug the projector without pressing the* Off *button and letting it cool, or you could damage it and reduce lamp life.*

Locking the Projector

You can lock the projector to prevent the image from being accidentally changed once it's adjusted, and to keep children from using the projector without adult supervision.

1. Press the Menu button on the remote control.
2. Use the menu navigation buttons to open the Setting menu, then open the Operation menu and select Lock Setting.
3. Choose from these options:
   - ❏ Focus Lock to prevent the focus from being changed.
   - ❏ Zoom Lock to prevent the picture size from being changed.
   - ❏ Key Lock to disable all the buttons on the projector's control panel. To operate the projector, you have to use the remote control.

Basic Image Adjustments

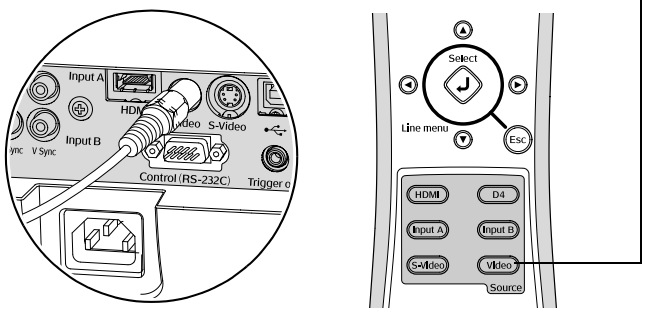
Once the projector is turned on, use these functions to adjust the image.

Selecting the Image Source

If you don't see the image you want, press the Source button on the remote control that corresponds to the port to which your video equipment is connected. For example:

To select the image source connected to the Video port . . .

. . . press the Video button



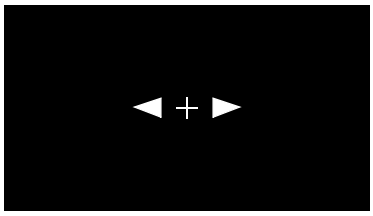
Focusing and Zooming the Image

To adjust the sharpness or size of the image:

Note: *Before starting, you may want to display a test pattern to facilitate adjustment. Press the* Pattern *button on the remote control, then select* Cross-hatching.

1. Press the Focus or Zoom button on the projector or remote control.

   You see this screen:



2. Use the ◄ ► arrow buttons to adjust the image.

   Note: *If you use the remote control, you can stand close to the screen while focusing the image. This lets you adjust the picture more precisely.*

3. Press ESC when done.

Inverting and Mirroring the Image

If the image is upside-down or backwards, use the Projection function to adjust it:

1. Press the Menu button on the remote control.
2. Use the menu navigation buttons to open the Setting menu, then open the Screen menu and select Projection.
3. Choose from these options:
   - ❏ Front if the projector is located in front of the screen (for example, on a table).
   - ❏ Front/Ceiling if the projector is located in front of the screen and mounted overhead.
   - ❏ Rear if the projector is located behind the screen.
   - ❏ Rear/Ceiling if the projector is located behind the screen and mounted overhead.

Selecting the Input Signal

If you're using the projector's Input A or B port, select the correct setting for the type of video equipment you've connected to it:

1. Press the Menu button on the remote control.
2. Use the menu navigation buttons to open the Setting menu, then open the Input Signal menu and select Input A or Input B (depending on the port to which you've connected your equipment).
3. Choose from these options:
   - ❏ YCbCr for a video player that outputs an NTSC signal.
   - ❏ YPbPr for a video player that outputs an HDTV signal.
   - ❏ RGB-Video if your video player outputs an RGB video signal.
   - ❏ RGB if your image is coming from a computer.

Performing Keystone Correction

If the projected image looks like ▱ or ▱, use the Keystone function to correct its shape.

Note: *If the image is shaped like ▱ or ▱, the projector has been placed off to the side of the screen and angled toward it. Face the projector straight ahead (instead of at the center of the screen), then use the horizontal lens shift knob to center the image.*

To perform keystone correction:

1. Press the Menu button on the remote control.
2. Use the menu navigation buttons to open the Setting menu, then open the Screen menu and select Keystone.
3. Use the ◄ ► arrow buttons to adjust the shape of the image.
4. Press the Menu button when done.

Choosing the Color Mode

You can change the Color Mode to adjust the brightness, contrast, and color, letting you quickly optimize the image for various lighting environments.

1. Select the image source you want to adjust (a different Color Mode can be saved with each image source).
2. Press the Color Mode button on the remote control. Then choose from these settings:
   - ❏ Dynamic for projecting images with vivid color in brightly lit rooms.
   - ❏ Living Room for projecting images with vivid color under ordinary room lighting.
   - ❏ Natural for projecting in subdued lighting; increases contrast and makes flesh tones appear more natural.
   - ❏ Theatre for projecting in subdued lighting; enhances the appearance of movies with dark scenes.
   - ❏ Theatre Black for projecting in fully darkened rooms.
   - ❏ sRGB for projecting computer images that conform to the sRGB color standard.

Note: *You can fine-tune the color and other image quality settings using the projector's menu system or the Cinema Color Editor software. See the* User's Guide *for details.*

Choosing the Aspect Ratio

Depending on the port to which your equipment is connected, your image can be automatically sized to fit on the screen when Auto is selected as the Aspect setting. If the image doesn't fit the way you like (as, for example, when using the Input A or B port), you may need to set the aspect ratio yourself.

4:3 image using Normal setting

16:9 image using Zoom setting

Press the Aspect button, then choose from these settings:

- ❏ Normal for standard TV broadcasts, computer images, or images having a 4:3 aspect ratio.
- ❏ Zoom for images recorded in 16:9 (wide-screen) format.
- ❏ Wide if you want to expand a 4:3 image to 16:9 so it fills the whole screen. This stretches only the right and left sides of the image; the central part is unchanged.
- ❏ Squeeze for recordings made in a compressed (anamorphic) 16:9 format, sometimes called "Squeeze Mode."
- ❏ Through if your image is smaller than 1280 × 720 pixels and you want to display it at its original pixel size without resizing it to fit on the screen.
- ❏ Squeeze Through if your image is recorded in Squeeze Mode, is smaller than 1280 × 720 pixels, and you want to display it at its original pixel size.

When you select an Aspect setting, the resolution at which the image displays depends on the currently active picture source. The resolutions for all video formats and aspect ratio settings are listed below.

Analog TV

	Aspect setting				
Format	**Normal**	**Zoom**	**Squeeze/Wide**	**Through**	**Squeeze Through**
NTSC	960 × 720	1280 × 720	1280 × 720	596 × 446	794 × 446
PAL or SECAM	960 × 720	960 × 720	960 × 720	708 × 528	944 × 528

Digital component video

		Aspect setting				
Format	**Signal name**	**Normal**	**Zoom**	**Squeeze/Wide**	**Through**	**Squeeze Through**
SDTV	480i 480p 575i 575p	960 × 720 960 × 720 960 × 720 960 × 720	1280 × 720 1280 × 720 1280 × 720 1280 × 720	1280 × 720 1280 × 720 1280 × 720 1280 × 720	596 × 446 596 × 446 708 × 528 708 × 528	794 × 446 794 × 446 944 × 528 944 × 528
HDTV	720p 1080i	1280 × 720 1280 × 720	— —	— —	1176 × 664 —	— —

Digital RGB video

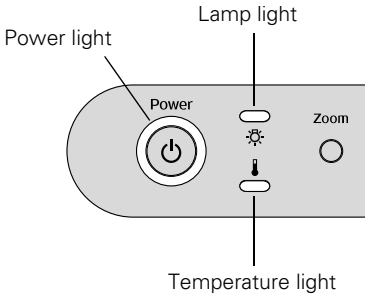
		Aspect setting				
Format	**Signal name**	**Normal**	**Zoom**	**Squeeze/Wide**	**Through**	**Squeeze Through**
SDTV	480i 480p 575i 575p	960 × 720 960 × 720 960 × 720 960 × 720	1280 × 720 1280 × 720 1280 × 720 1280 × 720	1280 × 720 1280 × 720 1280 × 720 1280 × 720	640 × 480 640 × 480 768 × 576 768 × 576	853 × 480 853 × 480 1024 × 576 1024 × 576
HDTV	720p 1080i	1280 × 720 1280 × 720	— —	— —	1280 × 720 —	— —

Computer monitor formats (analog RGB)

	Aspect setting				
Format	**Normal**	**Zoom**	**Squeeze/Wide**	**Through**	**Squeeze Through**
VGA	960 × 720	1280 × 720	1280 × 720	640 × 480	853 × 480
VESA	960 × 720	1280 × 720	1280 × 720	640 × 480	853 × 480
SVGA	960 × 720	1280 × 720	1280 × 720	800 × 600	1066 × 600
XGA	960 × 720	1280 × 720	1280 × 720	—	—
MAC13 inch MAC16 inch MAC19 inch	960 × 720 960 × 720 960 × 720	1280 × 720 1280 × 720 1280 × 720	1280 × 720 1280 × 720 1280 × 720	640 × 480 832 × 624 —	853 × 480 1109 × 624 —

Projector Status Lights

If your projector isn't working correctly, first turn it off, wait for the warning light to turn a steady orange, and unplug it. Then plug the power cord back in and turn on the projector. If this doesn't solve the problem, check the lights on top of the projector. They alert you to possible problems.

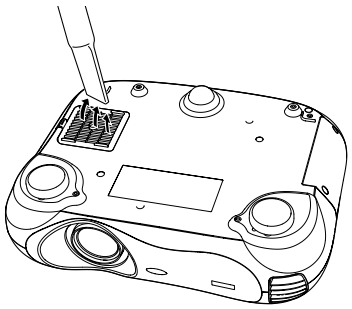


Light	Status	Action
⏻	off	Make sure the power cable is connected securely at both ends, then press the ⏻ **Power** button to turn on the projector. If you've just replaced the lamp, make sure the cover is securely fastened.
⏻	orange	The projector is in standby mode. You can unplug it to turn it off or press the ⏻ **Power** button to turn it on.
⏻	flashing green	The projector is warming up. Wait about 30 seconds for a picture to appear.
⏻	green	The projector is operating normally.
⏻	flashing orange	You've turned off the projector and it's cooling down. Wait until the light stops flashing, then unplug the projector (or press the ⏻ **Power** button to turn it back on). Never unplug the projector when the light is flashing orange.
🌡	flashing orange	High-speed cooling is in progress. If the projector gets too hot again, it turns off automatically. Make sure nothing is blocking the air filter. If it continues to overheat, clean the air filter; see instructions at right.
🌡	red	The projector is too hot and the lamp has turned off. Wait 5 minutes, then unplug the projector. Make sure nothing is blocking the air filter. If it continues to overheat, clean the air filter; see instructions at right.
☼	flashing orange	The lamp will need to be replaced soon. Make sure you have a spare lamp handy.
☼	red	The lamp needs to be replaced (see page 9). If you just replaced the lamp, the cover may be loose. Make sure it's securely fastened.
☼ 🌡	flashing red	If the lamp and/or temperature light is flashing red, there may be an internal problem. Turn off the projector, wait for the ⏻ power light to stop flashing, then unplug it from the electrical outlet and contact Epson for help.

Cleaning and Replacing the Air Filter

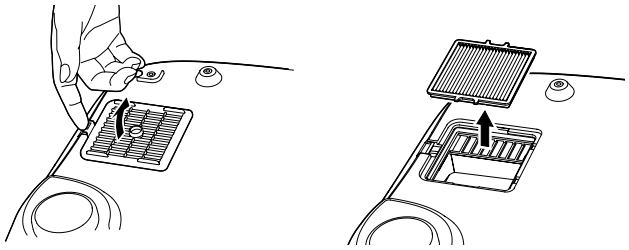
Clean the air filter on the bottom of the projector after every 100 hours of use. If it's not cleaned periodically, it can become clogged with dust, preventing proper ventilation. This can cause overheating and damage the projector.

1. Turn off the projector and wait for the ⏻ power light to stop flashing.
2. Unplug the power cord and disconnect any cables.
3. Turn the projector over. Then use a small vacuum cleaner designed for computers and other office equipment to clean the filter. If you don't have one, gently clean the filter using a very soft brush, such as an artist's paintbrush.



If the dirt is difficult to remove or the filter is broken, replace it. Contact your dealer or call Epson at (800) 873-7766 and ask for part number **V13H134A04**. In Canada, call (800) 463-7766 for dealer referral.

4. If you need to replace the filter, release the tab and lift open the cover.



5. Remove the old filter and replace it with a new one.
6. To replace the cover, insert the tabs and press down until the cover clicks into place.

Replacing the Lamp

The projection lamp lasts for up to 3000 hours (in low brightness mode) or 1700 hours (in high brightness mode). You can use the Info menu to check how long it's been in use. It's time to replace the lamp when:

- ❏ The projected image gets darker or starts to deteriorate.
- ❏ The projector's lamp light is red.
- ❏ The message Replace the lamp appears on the screen when you start projecting.

Note: *Lamp life results will vary depending on the selected mode, environmental conditions, and usage.*

Contact your dealer or call Epson at (800) 873-7766 in the United States for a replacement lamp. Request part number V13H010L28. In Canada, call (800) 463-7766 for dealer referral.

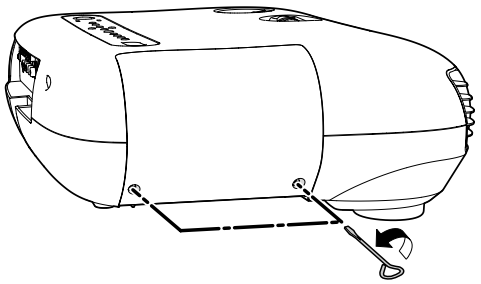
Warning: *Let the lamp cool fully before replacing it. In the unlikely event that the lamp has broken, small glass fragments may be present and should be removed carefully to avoid injury.*

The lamp component contains mercury. Please consult your state and local regulations regarding proper disposal or recycling, and do not place in the trash.

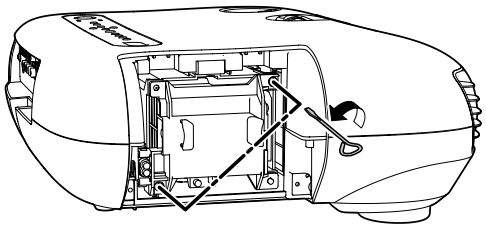
Caution: *Never touch the lamp with your bare hands; the invisible residue left by the oil on your hands may shorten the lamp life. Use a cloth or glove to handle the new lamp.*

Follow these steps to replace the lamp:

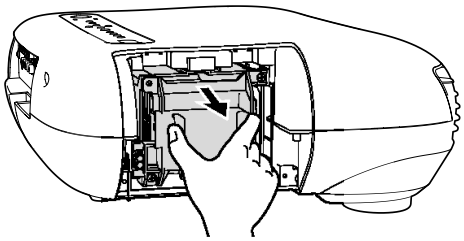
1. Turn off the projector and wait for the ⏻ power light to stop flashing, then unplug the power cord.
2. If the projector has been on, let it cool for about an hour.
3. Loosen the two screws securing the lamp cover (they don't come all the way out), and then remove the cover.



4. Loosen the two screws securing the lamp.



5. Grasp the lamp as shown and pull it straight out.



6. Fully insert the new lamp and tighten its screws.

Caution: *Don't touch the glass portion of the lamp assembly. Touching the glass could result in premature lamp failure.*

7. Replace the cover and tighten its screws. (The projector won't work if the lamp cover is open or loose.)
8. Reset the lamp usage timer, as described in the next section.

Resetting the Lamp Timer

After installing a new lamp, you need to reset the timer so the projector can keep track of how many hours it has been used.

1. Press the Menu button on the projector or remote control.
2. Use the menu navigation buttons to open the Reset menu, then select Lamp-Hours Reset.
3. When you see a confirmation prompt, highlight Yes and press the ↵ Select button.
4. When you're finished, press the Menu button to exit.

The lamp usage timer doesn't register until you've used the lamp for at least 10 hours.

Using Cinema Color Editor

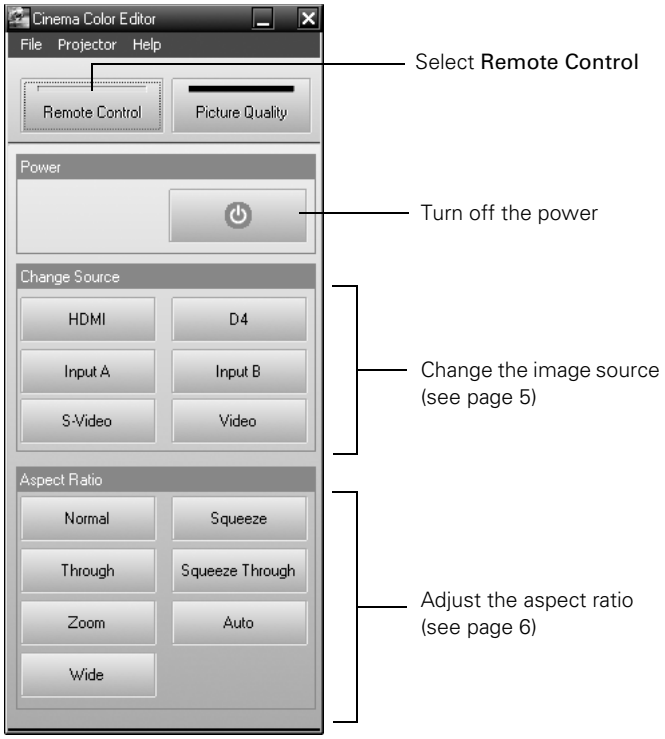
Cinema Color Editor is a program that lets you use your computer to operate the projector in place of the remote control, and to make fine custom color adjustments.

Note: *See the* User's Guide *for instructions on installing Cinema Color Editor and connecting the projector to your computer.*

Remote Control Operations

You can use Cinema Color Editor to change the image source, adjust the aspect ratio, or turn the power off—just as you would from the remote control.

1. Open Cinema Color Editor, then click the **Remote Control** tab.

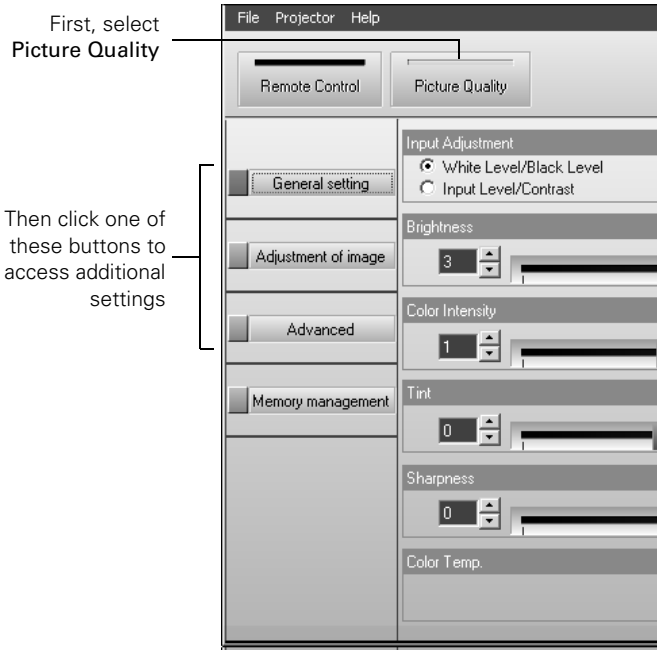


2. Click one of the buttons for the options shown above.

Adjusting the Picture Quality

You can use Cinema Color Editor in place of the projector's menu system to adjust the image.

1. Click the **Picture Quality** tab.



2. Click one of the buttons shown above to access these settings:

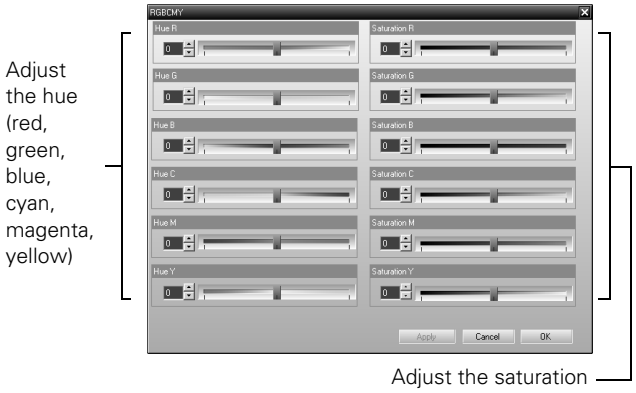
Button	Available adjustments
General setting	Input Adjustment Brightness Color Intensity Tint Sharpness Color Temp. and Flesh Tone Tracking Sync
Adjustment of image	Color Mode Color Adjustment (see next section)
Advanced	EPSON Super White Progressive Motion Detection Output Scaling Setup Level Noise Reduction DVI-Video Level Auto Setup

Note: *See the* User's Guide *for details on using these settings.*

Adjusting the Color

You can use the Color Adjustment settings to fine-tune the color of the image.

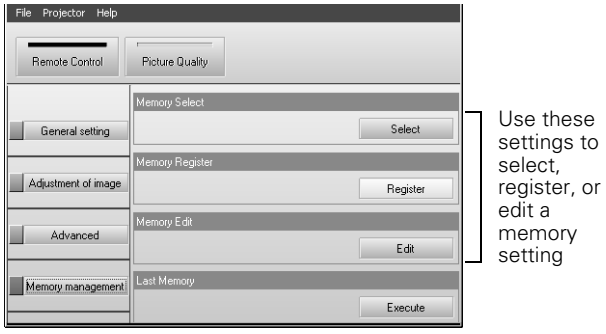
1. Select Picture Quality, then click Adjustment of image.
2. Select one of the following modes, then click Adjust.
   - ❏ RGB: Adjusts the offset, gamma, and gain for each signal color. Use Offset to adjust darker shades, Gamma for intermediate shades, and Gain for the lightest shades.
   - ❏ RGBCMY: Adjusts the hue and saturation for each of six colors, as shown on the color palette below. After moving a slider bar, click Apply.



Saving and Recalling Picture Settings

Once you've adjusted the picture to your liking, you can save your settings in the projector's memory. Then you can use the remote control (or Cinema Color Editor) to recall them for future use. You can also rename or delete memory settings stored on the projector.

1. Select Picture Quality, then click Memory management.



2. Click one of the following:
   - ❏ Select to use a memory setting stored on the projector
   - ❏ Register to create a new memory setting
   - ❏ Edit to change the name of an existing setting

   See the *User's Guide* for details.

Optional Accessories

Epson provides the following optional accessories:

Product	Part number
Replacement lamp (ELPLP28)	V13H010L28
Air filter replacement (ELPAF04)	V13H134A04
Ceiling mount	ELPHB01
Kensington security lock	ELPSL01
Macintosh adapter set (includes monitor adapter and desktop adapter)	ELPAP01
S-video cable	ELPSV01

You can purchase these accessories from your dealer, by calling Epson at (800) 873-7766, or by visiting the Epson Store℠ at www.epsonstore.com (U.S. sales only). In Canada, please call (800) 463-7766 for dealer referral.

Related Documentation

CPD-17304	*EPSON PowerLite Cinema 500 User's Guide*
CPD- 17303	*EPSON Extra Care℠ Home Service* warranty

Note: *Setup instructions are provided in the* User's Guide. *There is no setup sheet.*